

## REMARKS

Claims 1, 4, 7, 10-22, 26-34 and 55-59 are pending. Claims 2, 3, 5, 6, 8, 9, 23-25 and 35-54 are canceled.

1. Claims 1, 4, 7, 10-22, 24, 26-34, and 55-59 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement and were rejected under 35 U.S.C. 112, second paragraph as being indefinite. Specifically, the PTO objects to the recitation of flow and leveling without units. Attached is a copy of the ASTM D2801 standard adopted in August of 1981. One of ordinary skill would have understood flow and leveling to be a unitless value and thus, would have recognized the recitation of “mils” as a clerical error. As such, no new matter was added in correcting the clerical error. Paragraphs [0021], [0041], and [0044] are amended to remove the term “mils” in relation to flow and leveling. Accordingly, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. 112, first and second paragraph rejections.

2. Claims 1, 4, 7, 10-22, 24, 26-34, and 55-59 were rejected under 35 U.S.C. 112, first paragraph, as failing to enable a person skilled in the art to make the invention commensurate in scope with the claims. Applicants respectfully traverse this rejection.

The claims recite a composition and properties associated with the composition. Such properties are part of the scope of the claims. Note that not everything necessary to practice the invention need be disclosed. In fact, what is well-known is best omitted. *In re Buchner*, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991). All that is necessary is that one skilled in the art be able to practice the claimed invention, given the level of knowledge and skill in the art. Further the scope of enablement must only bear a “reasonable correlation” to the scope of the claims. See, e.g., *In re Fisher*, 166 USPQ 18, 24 (CCPA 1970). MPEP 2164.08. Applicants respectfully assert that upon reading the present disclosure, one of ordinary skill in the art would have been able to make and use the recited composition commensurate in scope with the claims without undue experimentation. As such, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. 112, first paragraph rejection.

3. Claims 1, 4, 10-12, 15, 17-22, 24, 26, 27, 29, 31-34 and 55-59 were rejected under 35 USC §102(b) as anticipated by or, in the alternative, under 35 USC §103(a) as obvious over Elsik et al. (US 5,550,180, hereinafter “Elsik”). Applicants respectfully traverse this rejection.

Claim 1 is directed to a surface coating solution including a water-based solution including a polymer and an emulsion. The surface coating solution also includes activated boehmite particles provided in the water-based solution in an amount of 0.1 wt% to 20 wt%. The activated boehmite particles include mainly anisotropically shaped particles having an aspect ratio of at least 3:1. The surface coating solution has flow and leveling of at least 6 and a sag resistance of at least 7 mils. The surface coating solution is free of associative thickener.

Claim 22 is directed to a surface coating solution including a latex emulsion and activated boehmite particles in an amount 0.1 wt% and 20 wt%. The activated boehmite particles include mainly anisotropically shaped particles having an aspect ratio of at least 3:1 and a longest dimension of at least 50 nanometers. The surface coating solution has flow and leveling of at least 6 and a sag resistance of at least 7 mils. The surface coating solution is free of an associative thickener.

Elsik is directed to a latex composition comprising, as a rheology modifier, an amount of boehmite alumina having a crystal size of less than 60 Angstroms and a surface area when calcined to a gamma phase, of greater than approximately 200 m<sup>2</sup>/g. (Elsik, Abstract). In ascertaining the dimensions of the boehmite alumina, the PTO appears to have confused crystallite size with particle size. Please note that Applicant’s claims refer to particle dimensions. In Example 1, Elsik discloses a latex paint formulation including Dispersal P2, described as a water dispersible boehmite alumina marketed by Condea Chemie G.M.B.H., in an amount of approximately 0.72 wt %. Elsik is silent regarding the sag resistance and flow and leveling characteristics of this formula. As such, Elsik fails to explicitly disclose a latex formulation having a sag resistance of at least 7 mils and a flow and leveling of at least 6.

Further, Elsik fails to inherently teach or suggest a latex formulation having the claimed sag resistance and flow and leveling properties. The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. To establish inherency, the extrinsic evidence must make clear that the missing

descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. (See MPEP 2112).

As explained in a Declaration signed by Dr. Doruk Yener of August 17, 2009, experiments demonstrate that latex formulations prepared in accordance with the Examples 1 and 3 of Elsik do not exhibit the recited flow and leveling and sag resistance. Applicants tested formulations closely matching the formulations of the examples with the exception that the discontinued latex was replaced with a commercially available latex having similar properties. Each of the formulations of Examples 1 and 3 that included alumina particulate failed to exhibit both flow and leveling of at least 6 and sag resistance of at least 7.

In contrast, claim 1 recites a surface coating solution that is free of associative thickener and has flow and leveling of at least 6 and a sag resistance of at least 7 mils. Similarly, claim 22 is directed to a surface coating solution having a flow and leveling of at least 6 and a sag resistance of at least 7 mils that is free of an associative thickener.

As Dr. Yener states, improvements in flow and leveling often come with a sacrifice to sag resistance and vice-versa. Clearly, the conventional formulations of Elsik fail to establish a balance between flow and leveling and sag resistance. As such, Elsik fails to teach or suggest, explicitly or inherently, each of the claimed features.

For at least the foregoing reasons, claims 1, 4, 10-12, 15, 17-22, 24, 26, 27, 29, 31-34, and 55-59 are patentable over Elsik. As such, Applicants respectfully request reconsideration and withdrawal of the 35 USC §102(b) and 35 USC §103(a) rejections.

4. Claims 1, 4, 7, 10-22, 24, 26-34, and 55-59 were rejected under 35 USC §103(a) as being obvious over Elsik in view of Bugosh (US 2,915,475, hereinafter “Bugosh”), and in view of Gernon et al. (US 2006/0106129 A1, hereinafter “Gernon ‘129”). Applicants respectfully traverse this rejection.

As described above, Elsik fails to teach or suggest, explicitly or inherently, a latex formulation that is both free of associative thickener and has the claimed sag resistance and flow

and leveling properties. Accordingly, the PTO turns to Bugosh, relying on Bugosh for the use of high aspect ratio boehmite in aqueous solutions. Bugosh further discloses that fibrous boehmite can be used as reinforcing filler in making plastic films, coatings, paints, adhesives, or other plastic articles. The fibrous boehmite may be mixed with aqueous dispersions of polymers. (Bugosh, col. 29, ll. 1-21). Bugosh is silent regarding composition of the coatings and paints and is silent regarding characteristics of the coatings and paints, such as flow and leveling, sag resistance, and set-to-touch dry time characteristics. While, as disclosed by Bugosh, it may have been known to incorporate boehmite into coatings, paints, and adhesives, Bugosh is silent regarding activating the boehmite particulate and is silent regarding the process for forming aqueous dispersions of polymers. Accordingly, Bugosh and a combination of Elsik and Bugosh do not disclose a latex formulation that necessarily, and thus, inherently has the recited thixotropic properties.

In addition, the PTO turns to Gernon '129, which discloses latex paint formulations that contain N-n-butyl ethanolamine (BAE) as a neutralizing agent. Gernon '129 discloses a flat interior paint that includes a Polyphobe 102 rheology modifier and other coatings that include RHOPLEX® or Acrysol® rheology modifiers. Polyphobe is a line of associative thickeners according to the attached document from the Dow Chemical Company, the current vendors of the UCAR Polyphobe line of thickeners. The flat interior paint of Example 2 (Table 3) of Gernon '129 reportedly exhibits a leveling of 8. Gernon '129 does not disclose the use of a boehmite rheology modifier and is silent regarding the sag resistance of the paint formulations. In particular, the PTO relies on Gernon '129 for the pH of commercial latex paint, the set dry time, the viscosity, and leveling of commercial latex paints. In particular, the viscosity and leveling can be influenced by the presence of associative thickener, which is present in the examples of Gernon '129. The PTO states that Gernon '129 is cited to show pH, set-to-touch dry time, and viscosity of commercial paints, not for thickeners, but clearly thickeners can influence some of such properties.

In the present specification, prior Declarations, and the experiments illustrated in the attached Declaration of Dr. Yener, Applicants clearly demonstrate that sag resistance, flow and leveling, and viscosity are influenced by the use of boehmite thickeners. As demonstrated by the examples provided in the attached Declaration, the properties of Gernon '129 are not inherent to

the compositions of Elsik, particularly in absence of associative thickeners used in Gernon '129. Moreover, as illustrated by the experiments provided by Dr. Yener, not all latex formulations necessarily have the claimed flow and leveling and sag resistant properties. Even those formulations (e.g., Example 1 of Elsik) having a flow and leveling of at least 6 may have sag resistance lower than 1 mil, as there is a tradeoff between flow and leveling and sag resistance. See Declaration. Accordingly, the PTO cannot attribute the properties of Gernon '129 to the compositions of Elsik, particularly as modified with the addition of the boehmite particulate of Bugosh and in the absence of associative thickeners.

In the Office Action (pg. 8), the PTO states that the assertion of inherency is based solely on Elsik. Bugosh and Gernon '129 are referenced to show other properties that are claimed. The Declaration of Dr. Yener demonstrates that the Examples 1 and 3 of Elsik do not exhibit the recited flow and leveling and sag resistance. Flow and leveling, sag resistance, and other properties are influenced by the selection of thickener, each of Bugosh and Gernon '129 utilizing a different thickener. Accordingly, the claims are not inherently disclosed by Elsik and other claimed properties cannot be readily transferred to the formulation of Elsik without influence flow and leveling, sag resistance, or viscosity.

In contrast, claim 1 and claim 22 recite surface coating solutions that are free of associative thickener and have flow and leveling of at least 6 and a sag resistance of at least 7 mils. As demonstrated by the experiments illustrated in the attached Declaration by Dr. Yener, the Examples 1 and 3 of Elsik do not necessarily provide latex formulation having the recited properties. Accordingly, any assertion that the proposed combination necessarily and thus, inherently has the claimed properties is erroneous.

For at least the foregoing reasons, claims 1, 4, 7, 10-12, 24, 26-34, and 55-59 are patentable over Elsik in view of Bugosh and in view of Gernon '129. As such, applicants respectfully request reconsideration and withdrawal of the 35 USC §103(a) rejection.

5. Claims 1, 4, 7, 10-22, 24, 26-34, 55-59 were rejected under 35 USC §103(a) as being obvious over Bugosh and Gernon '129. Applicants respectfully traverse this rejection.

While it is unclear whether the PTO is proposing the substitution of the particulate of Bugosh for the associative thickener of Gernon '129 or alternatively, the PTO is proposing the addition of the particulate of Bugosh to the formulation of Gernon '129, Applicants have clearly demonstrated that the claimed properties are not necessarily present and thus not inherently present in latex formulations that include anisotropically shaped boehmite particulate. Moreover, the claims explicitly recite "free of associative thickener." Gernon '129 clearly includes associative thickener.

For at least the foregoing reasons, claims 1, 4, 7, 10-22, 24, 26-34, and 55-59 are patentable over Bugosh and Gernon. As such, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. 103(a) rejection.

Applicant(s) respectfully submit that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for all pending claims.

Should the Examiner deem that any further action by the Applicants would be desirable for placing this application in even better condition for issue, the Examiner is requested to telephone Applicants' undersigned representative at the number listed below.

The Commissioner is hereby authorized to charge any fees, which may be required, or credit any overpayment, to Deposit Account Number 50-3797.

Respectfully submitted,

August 17, 2009

/John R. Schell/

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Date

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